



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,470	09/08/2003	Naoto Hirota	KANEKO.008AUS	9817

7590 08/03/2011  
MURAMATSU & ASSOCIATES  
114 PACIFICA  
SUITE 310  
Irvine, CA 92618

EXAMINER
----------

CALEY, MICHAEL H

ART UNIT	PAPER NUMBER
----------	--------------

2871

MAIL DATE	DELIVERY MODE
-----------	---------------

08/03/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/657,470	<b>Applicant(s)</b> HIROTA, NAOTO	
	<b>Examiner</b> MICHAEL CALEY	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6,7,9,10,12,13,15,16 and 18-54 is/are pending in the application.
- 4a) Of the above claim(s) 9,10,12,13,15,16 and 18-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,7,53 and 54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee (U.S.**

**Patent Application Publication No. 2003/0112397).**

Regarding claim 1, Lee discloses a color active matrix type vertically aligned mode liquid crystal display comprising on a substrate:

a scan signal wiring (Figure 3 element 14);

a video signal wiring (Figure 3 element 17);

a thin film transistor (TFT) which is formed at an intersection of the scan signal wiring and the video signal wiring;

a transparent pixel electrode (13; Paragraph [0049]) connected to the thin film transistor (Figure 3) element in which two or more long and slender slits are formed (16', 16);

an active matrix substrate (Figures 1, 2, element 11) having a liquid crystal alignment direction control electrode (18) in a lower layer of the slits of the transparent pixel electrode currently formed via an insulator film (15);

Art Unit: 2871

a substrate (10) facing the active matrix substrate; and  
an anisotropic liquid crystal layer (100) having a negative dielectric constant  
(Paragraph [0049]);

wherein in order to impress a voltage to liquid crystal molecules vertically aligned  
(Paragraph [0051]) between the active matrix substrate and the other substrate, and to  
make the liquid crystal molecules tilt in different two directions (Figures 1 and 2), two  
kinds of following electrode structures are formed in one pixel of the active matrix  
substrate:

(i) a transparent flat common electrode (12) is used on the other substrate side,  
and for the transparent pixel electrodes facing the transparent flat common electrode in  
the active matrix substrate side, patterns having a shape of a long and slender slit are  
formed (16') in such a way that the transparent pixel electrode is removed at a part of the  
slit, where the liquid crystal alignment direction control electrode is excluded in a lower  
layer of the slit (Figures 3 and 4 element 16');

(ii) an electrode structure in which a transparent flat common electrode is used in  
the other substrate side, and for the transparent pixel electrode facing the transparent flat  
common electrode in the active matrix substrate side, patterns having a shape of a long  
and slender slit are formed, and a liquid crystal alignment direction control electrode  
having a shape substantially the same as that of the slit and a larger dimension than a  
dimension of the slits is formed in a lower layer of the slits (Figures 1-4 elements 16 and  
18) via the insulator film (15) where the transparent pixel electrode and the liquid crystal

Art Unit: 2871

alignment direction control electrode in each pixel of the active matrix substrate are driven separately from one another (Paragraph [0057]).

Regarding claim 7, Lee discloses adjacent transparent pixel electrodes in a direction of the scan signal wiring are connected to a thin film transistor component controlled by mutually different scan signal wirings (Paragraph [0050]).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 4, 53, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Watanabe.**

Lee fails to disclose the polarities of the potential of the transparent pixel electrode, and the potential of the liquid crystal alignment control electrode as reversed to a polarity of the potential of the flat common electrode in the color filter substrate side every vertical scanning period. Watanabe, however, teaches such a reversal of polarity for every vertical scanning period as a means of reducing flicker (Column 3 lines 39-42, Column 4 lines 45-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to drive the display disclosed by Lee by reversing the polarity in every vertical

Art Unit: 2871

scanning period. One would have been motivated to drive the display as proposed to reduce display flicker (WatanabeColumn 3 lines 39-42, Column 4 lines 45-62).

Lee as modified by Watanabe further discloses two rows of liquid crystal alignment direction control electrodes that are mutually separated and set at potentials different from each other and as mutually exchanged in every fixed pixel cycle, due to polarity inversion between pixels.

**Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable Lee in view of Suzuki et al. (U.S. Patent No. 6,407,791 “Suzuki”) and Watanabe (U.S. Patent No. 6,665,023).**

Regarding claim 3, Lee fails to disclose the driving characteristics as proposed.

Suzuki discloses the display such that:

when a potential of the transparent pixel electrode separated for every pixel of the active matrix substrate side is lower than a potential of the facing flat common electrode on the color filter substrate side, a potential of the liquid crystal alignment direction control electrode currently placed in a lower layer of the slit of the transparent pixel electrode is set lower than a potential of the transparent pixel electrode (Column 11 lines 1-8, Column 11 lines 24-31); and

when a potential of the transparent pixel electrode separated for every pixel of the active matrix substrate side is higher than a potential of the facing flat common electrode on the color filter substrate side, a potential of the liquid crystal alignment direction

Art Unit: 2871

control electrode currently placed in a lower layer of the slit of the transparent pixel electrode is set higher than a potential of the transparent pixel electrode (Column 11 lines 1-8, Column 11 lines 24-31).

Further, Watanabe, however, teaches such a reversal of polarity for every vertical scanning period as a means of reducing flicker (Column 3 lines 39-42, Column 4 lines 45-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to drive the display disclosed by Lee by setting the potential of the transparent pixel electrode and the liquid crystal alignment electrode relative to one another as proposed and reversing the polarity in every vertical scanning period. One would have been motivated to set the liquid crystal alignment direction control electrode as proposed to cause the liquid crystal to be aligned for a symmetric viewing angle characteristic (Column 11 lines 45-49). One would have been motivated to drive the display with the proposed reversal of polarity to reduce display flicker (Watanabe: Column 3 lines 39-42, Column 4 lines 45-62).

### ***Response to Arguments***

Applicant's arguments filed 4/18/11 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim(s).

Art Unit: 2871

Regarding claims 1 and 7, the claims do not recite items (1), (2), and (3) of Remarks Pages 41 and 42 relating potentials of various electrodes and the reversal of polarities.

Regarding arguments presented on Pages 42-44 of Remarks, the claims do not recite the materials of the various electrodes as argued.

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2871

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL CALEY whose telephone number is (571)272-2286. The examiner can normally be reached on M-F 6:00 a.m - 2:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael H. Caley/  
Primary Examiner, Art Unit 2871